

REMARKS

An amended abstract is submitted herewith.

Claims 13 and 14 stand rejected under 35 USC 112, second paragraph. Claims 12-22 have been replaced with new claims 23-36, and it is believed that the new claims are not open to rejection under 35 USC 112, second paragraph.

Claims 12-22 stand rejected under 35 USC 103 relying on Bowers et al and at least one of Fisher et al and Paden et al.

As described in the paragraph starting at page 2, line 23, applicant has discovered that a magnetic field sensor of a conventional globe including a magnetically suspended globe sphere does not provide a satisfactory signal for preventing oscillation of the globe sphere. Applicant found that oscillations of the sphere are manifested by a change in the duty cycle of the electromagnet over a relatively short sensing period. Thus, change in the average current can be used to derive a signal for correcting activation of the electromagnet to suppress oscillation of the globe sphere

Bowers et al discloses a magnetic suspension system for magnetically suspending an object O provided with a permanent magnet 10. The suspension system includes an electromagnet 12 and Hall effect sensors 15, 16 that detect the magnetic field of the permanent magnet 10 and provide a signal that depends on the proximity of the magnet 10 to the sensors. A comparator 21 compares the summed or averaged signal from the Hall effect sensors with a reference voltage and the output signal of the comparator 21 controls the supply of current to the electromagnet. Bowers et al does not disclose or suggest that the average current supplied to the electromagnet should be measured and that change in average current should be used to correct activation of the electromagnet to avoid oscillation of the object O.

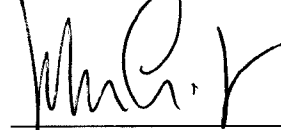
The examiner relies on paragraph [0035] of Paden et al as disclosing a microcontroller comprising at least one register/counter for sensing the energized/deenergized status of

an electromagnet and/or a device for sensing the current flow through an electromagnet, or the voltage at an electromagnet, over at least one defined time period. Applicant submits that the disclosure in paragraph [0035] of Paden et al is too broad and nonspecific to suggest anything of value to a person of ordinary skill in the art seeking to improve the magnetic suspension system disclosed by Bowers et al.

Fisher et al does not supply the deficiency in the disclosure of Bowers et al.

In view of the foregoing, applicant submits that the new independent claims 23 and 29 are patentable. It follows that the dependent claims also are patentable.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'John Smith-Hill', is written over a horizontal line.

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